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ABSTRACT

It is axiomatic that context influences interpersonal behaviors, yet communication researchers have had limited success in generating a set of conceptual or operational definitions for the situation variable. Two studies were conducted to examine emotion-eliciting qualities as the basis for such a typology and the relationship of situations classified by this system to other variables. Specifically, the first study investigated whether interpersonal situations could be described reliably in terms of emotion-eliciting qualities, while the second study tested specific predictions about approach toward or avoidance of interpersonal situations based on emotions elicited. In the first study, 102 college undergraduates completed emotion-eliciting scales for a variety of situations, and, in the second, 170 students completed scales measuring anticipated approach-avoidance. Results indicated that emotion-eliciting qualities comprise a system for classifying situations that is exhaustive, mutually exclusive, and related to the theoretical purposes of explanation and prediction. Further, the findings showed that emotion-eliciting qualities of interpersonal situations relate systematically to other variables. Approach toward or avoidance of interpersonal situations, for example, was predicted and explained in terms of emotions elicited by those situations. (FL)

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A TYPOLOGY FOR INTERPERSONAL SITUATIONS OR, HOW DO I CLASS THEE, LET ME COUNT THE WAYS

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A TYPOLOGY FOR INTERPERSONAL SITUATIONS
OR, HOW DO I CLASS THEE,
LET ME COUNT THE WAYS

(abstract)

It is axiomatic that context influences interpersonal behaviors, yet researchers have had limited success in generating a set of conceptual or operational definitions for the situation variable. What is needed is a highly flexible typological schema acceptable to a broad range of scholars. Two studies are reported that examine emotion-eliciting qualities as the basis for such a typology and the relationship of situations classified by this new system to other variables. It is demonstrated that this typological system is exhaustive, exclusive, and allowes meaningful manipulation of the situation variable. Specifically, it is demonstrated that interpersonal approach and avoidance can be accurately predicted and explained.

It has become nearly axiomatic that communication behavior is situationally influenced (DeVito, 1980; Knapp, 1978; Masterson, 1977; Smith and Williamson, 1981; Brooks and Emmert, 1980; Miller and Steinberg, 1975). Even though this idea is almost universally accepted, several problems still obtain in its application. Many authors agree that specification of situational effects is, at present, difficult (Mortensen, 1972; Knapp, 1978). This is largely due to the complexity, and consequent difficulty of measurement, associated with situations (Brooks and Emmert, 1980).

Recent theoretical and experimental work in the area of emotion suggests that human response to a stimuli set, no matter how complex or the sense modalities involved, can be described parsimoniously in terms of emotion-eliciting qualities (Mehrabian, 1980). The emotional response of an individual is posited to relate systematically to a generic set of behaviors conceptualized along an approach-avoidance continuum (Russell and Mehrabian, 1978a.) If we can conceptualize interpersonal situations as complex sets of stimuli, then it seems possible that such situations can be described parsimoniously in terms of their emotion-eliciting qualities. If the emotion-eliciting qualities of interpersonal situations can be measured reliably, then we may be able to make specific predictions about approach-avoidance behaviors relative to particular situations. In short, we should be able to create a useful way of thinking about situations.

This paper presents the results of two studies that investigated emotions elicited by situations and behaviors related to them. In the first experiment we attempted to determine if interpersonal situations

can be described reliably in terms of emotion-eliciting qualities. In the second study, we tested specific predictions about approach toward or avoidance of interpersonal situations based on emotions elicited.

The Situation Problem

A major problem in the examination of situational impact on behavior has been the absence of a clear definition of situation (Pervin, 1978). In a recent review of the literature from diverse areas of social science Pervin (1978) suggests that:

> "In any particular situation we are interested in the organism's engagement with an array of objects and actions which cover a time span. A situation is defined by who is involved, including the possibility that the individual is alone, where the action is taking place, and the nature of the action or activities occurring. The situation is defined by the organization of these various components so that it takes on a gestalt quality, and if one of the components changes we consider the situation to have changed. While a situation has a gestalt quality, it is defined by who is involved, what is going on, and where the action is taking place."

A situation can be thought of as a unique organization of persons, things, and actions as perceived by an organism.

Pervin's definition of the situation variable seems acceptable but suggests further problems. Description of even one situation will be difficult since we must deal with all of the numerous variables that are associated with each of the persons that are present, including the observer (demographics, personalities, psychological variables, artifacts, etc.). We must account for all of the environmental variables (colors, textures, space, objects, arrangement, etc.) and all of the action or process variables (persuasion, discussion, etc.), not to mention interactions among all these. If we wish to describe an entire class of situations--public speaking situations for communication

apprehension research or initial meeting situations for person perception and attraction research--the problem becomes even more acute. Now we must not only deal with all of the variables mentioned above, but with all of the possible values that any of the variables can exhibit in any situation within the class we wish to describe (All posible persons places, objects and soon). This means a multitude of scales and a seemingly endless process. If we wished to create a system that could be used tc describe and classify all situations, then the problem has grown exponentially.

Several researchers have attempted to solve this problem in their own areas of research. McCroskey and Richmond (1980), for example, have suggested a typology of situations for research in Communication Apprehension. Their system focuses on the action variable classifying situations based on type of communication (i.e., small group, public speaking, etc.). Systems of this kind may be useful in a particular area, but do not provide much help overall. Generally, such systems focus on one set of variables--persons or places or actions--but rarely on the full range of stimuli involved. Furthermore, these various typologies are not compatible or comparable.

These systems all fail to meet one of the key requirements of the Pervin definition. He suggested that "the situation is defined by the organization of (all) these various components so that it takes on a gestalt quality." If we wish to talk about situation, we must talk about the gestalt created by the interaction of <u>all</u> the various components. By this standard, the limited scope typologies are of little or no use. What is needed is a means of describing and

manipulating the gestalt of the situation. Our problem is to tap the perceiver's experience of this unique gestalt.

The standards we have set for evaluating any system of classifying situations include: (1) it is not limited to one type of variable (i.e., people, places or actions); (2) it is not limited to one sense modality (sight, sound, smell, etc); (3) it reflects the gestalt of the situation not just a part of it; (4) it allows for the scaling of all situations on the same dimensions so that different situations can be compared. It is possible that a single classification system based on human emotional response to situations may meet all of these criteria.

The Nature of Emotion

The initial conceptualization of emotion, still accepted widely, posits that emotion is composed of 6 to 12 independent monopolar dimensions (Russell, 1980; Borgatta, 1961; Clyde, 1963; Curran and Cattell, 1975). Central to this scheme is the idea that one emotional state is not related to another. Thus, elation is not similar to happiness, nor is it the opposite of sadness. Even though this contradicts common sense, it has been widely accepted. More recent research has suggested that these earlier findings were more the result of the methods used than the nature of the underlying phenomena (Russell, 1980; Meddis, 1972; Svensson, 1978; Bush, 1973; Russell and Mehrabian, 1974).

Work with alternate methods has produced a growing body of research suggesting that all emotional states are inter-related so that it is possible to describe emotion systematically with a simple three factor system. This conceptualization proposes that all emotional states are

combinations of three independent bipolar dimensions; pleasure-displeasure, degree of arousal, and dominance-submissiveness (Mehrabian and Russell, 1974; Mehrabian, 1980). This important conceptual shift is central to the present thesis that emotion can be the center of a typology of situations. Therefore, the evidence underlying the claim warrants further investigation.

Evidence from such diverse areas as intermodality association, synesthesia, and physiological response to stimuli, all suggest that a limited set of basic emotional responses exists for all stimulus situations, independent of the sensory modality involved. Intermodality associations and synesthesia are examples of stimulation in one sense modality affecting perceptions in another. Evidence from experiments with the matching of adjectives with odors (Hazzard, 1930), the visualization of music (Karwoski and Odbert, 1938; Luria, 1969), the association of music and color (Odbert, Karwoski and Eckerson, 1942), and the association of scents with tones (von Hornbostel, 1931), all suggest that intermodality responding exists (Mehrabian and Russell, 1974). Osgood (1960) suggests that there is ample evidence to indicate that visual-verbal synesthesia exists as well.

Intermodality responding and synesthesia are evidence for a common, cross-modal core of human responses. This conceptualization suggests that a common emotional response mechanism acts as a bridge between the sense modalities allowing stimulation in one mode to influence perception in another mode (Mehrabian and Russell, 1974).

Evidence from physiological response experiments supports the presence of a common but limited core of responses no matter what sense modality is stimulated. Studies have repeatedly found degree of

pleasure (as measured in brain mid-line stimulation) (Heath, 1954, 1963, 1964; Olds, 1956), arousal (as often measured with GSR, blood pressure, and so forth) (Berlyne, 1960), as primary responses (Mehrabian, 1980).

The evidence suggests that instead of being composed of independent dimensions, emotional responses may be characterized as phenomena with a common core. Understanding of this common core will allow us to relate emotional states to one another systematically. However, the underlying structure of emotion must be understood before this goal can be attained.

The structure of human emotional response has been investigated in a number of ways. This variety of methodologies gives us a great advantage in discovering the underlying nature of all emotional reaction. Russell (1980) suggests that each method used to investigate emotion will have variance accounted for by two factors: (1) the underlying nature of the phenomenon itself (emotion); and (2) the nature of the method. Some factors will be found which are artifacts of methodological procedures but common factors will emerge across methods. If we can discover these common factors, we will have discovered the underlying structure of emotional response.

In studies of emotion as revealed in facial expressions, it has commonly been found that a three factor solution will account for all of the emotions expressed. Three independent bipolar dimensions account for the underlying structure; pleasantness-unpleasantness, level of arousal, and dominance (Abelson and Sermat, 1962; Engen, Levy and Schlosberg, 1957; Gladstone, 1962; Schlosberg, 1954).

In areas of nonverbal research other than facial expressions (implicit verbal, gestural, and body position) a similar three factor

solution has been discovered (Mehrabian, 1972a,b; Mehrabian and Ksionzky, 1974). Mehrabian has labelled these dimensions pleasantness, arousal and potency.

Studies of the nature of emotion as reflected in natural language, or "affect" as Russell (1980) defines it, have generally found a three factor solution. The three factors are similar to the ones reported in the facial expression research (Osgood, May, and Miron, 1957; Osgood, 1969; Averill, 1975; Russell and Mehrabian, 1977).

Specifically, research with the semantic differential has found three factors as the underlying structure of affective meaning. These three dimensions--evaluation (pleasantness), activity (arousal), and potency (dominance)--have been discovered consistently (Osgood, 1966; Williams and Sundene, 1965; Osgood, Suci, and Tannenbaum, 1957; Snider and Osgood, 1969). These factors have been interpreted as affective, rather than cognitive, by Osgood (1969).

Analyses of verbal reports of emotion yielded initially from six to twelve independent emotional states. Russell (1980) suggests that this was due to the methods employed. Indeed, Meddis (1972) has demonstrated that when the acquiescence bias (the tendency to see any adjective as self descriptive) is removed, the three factor solution will explain the underlying structure of emotion in self reports. This view is supported by Svensson (1978), Bush (1973), Russell and Mehrabian (1974), and Russell, Ward and Platt (1978).

Russell and Mehrabian (1977) have provided some of the best evidence for the argument that all emotional states can be described with a very limited number of underlying factors. Scores for 42 emotional state scales and 151 emotion terms were found to be

explainable with scores from three independent, bipolar factors: pleasure, arousal, and dominance. Indeed, in this study all of the reliable variance was accounted for (Russell and Mehrabian, 1977).

It seems possible to conclude that a limited set of dimensions underlies all emotional response. But what is the reason for this consistency of response? At least two possible answers are suggested by the literature. Russell (1980) suggests that every person possesses an "implicit emotion theory". It is implicit in the sense that the person could not explicitly state his or her complete conceptual frame; the nature of the frame must be inferred from judgments about emotion that are made by the person. It is a theory in the sense that persons seem to have a cognitive schema for emotion that enables them to deal with emotional information in all channels. Russell (1980) suggests that it is this cognitive schema of emotion that allows for the common results we find from differing research methods. This schema would be used by a person when interpreting facial expressions, implicit and explicit emotion in language, nonverbal communication in general, and a host of other possible cues. In other words, no matter which channel is stimulated, or the nature of the variable or the range of values, there is a fairly simple primary emotional response schema that is triggered.

Osgood (1960) suggests that this commonality of response is due to the biological nature of man. He has argued:

> "Finally, we may inquire into the reasons behind similarities in connotative systems despite language/culture differences. First, by virtue of being members of the human species, people are equipped biologically to react to situations in certain similar ways--with automatic, emotional reactions to rewarding and punishing situations (evaluation), with strong or weak muscular tension to things offering great or little resistances (potency), and so on--and hence they can form connotative significances for perceived objects and their linguistic signs varying along the same basic dimensions.

> Such connotative reactions enter into a wide variety of meaningful situations, are therefore broadly generalized, and provide a basis for synesthetic and metaphorical transpositions. Beyond this shared connotative framework, there are many specific relations between human organisms and their generally similar environments whose stability can be the basis for synesthetic and metaphorical translations. These may be either innate to the species or developed by learning under similar conditions. An example of the former (innate) basis may be the common association of the red end of the spectrum with warmth and activity and the blue end with coldness and passivity. An example of the latter (acquired) basis may be the common association of visually large with auditorily loud--it is simply a characteristic of the physical world that as any noise-producing object approaches or is approached, increases in visual angle are correlated with increases in loudness. These "homotropisms" and experiential contingencies may be expressed in language but are independent of the structure of any particular language" (p. 168).

In summary, Mehrabian (1980) has concluded that "emotions are ever present and constitute the precognitive or rudimentary aspects of cognitive response to situations, events and persons." The emotions elicited by a group of stimuli can be described as an affective or feeling state that is the primary response of the organism to the situation. The affective state can be described by a parsimonious set of three orthogonal bipolar dimensions: pleasure- displeasure, arousal-nonarousal, and dominance-submissiveness. Pleasure-displeasure is a continuum ranging from extreme pain or unhappiness at one end to extreme happiness or ecstasy at the other. Arousal ranges form sleep through intermediate states of drowsiness, calmness, and alertness to frenzied excitement at the opposite extreme. Dominance-submissiveness ranges from extreme feelings of being influenced and controlled to feelings of mastery and control. These three dimensions are both necessary and sufficient to describe any emotional state (Mehrabian,1980).

Three emotional responses; pleasure, arousal, and dominance, are proposed as a common core of human emotional response to all stimuli. No matter which, or how many, modalities of sensation are involved, there are only three response dimensions. Each of these dimensions is orthogonal (independent of the others) so that any value on one may be accompanied by any value on the other two, allowing for an infinite number of combinations. The complexity of a situation involving multiple objects, persons and actions can then be summarized with three parsimonious dimensions (Mehrabian, 1980).

Approach-Avoidance

It is proposed that emotions elicited mediate behavioral responses. Behavior is conceptualized in terms of a generic class of actions called approach-avoidance. Behaviors are seen as representing some point along a continuum from extreme desire to be associated with the situation to extreme desire to avoid association with the situation. These behaviors include physical approach versus movement away from; degree of exploration such as looking around and examining details; length of stay; various verbal and nonverbal expressions of preference; like-dislike; degree of approach toward versus avoidance of persons; and tasks in the situation (Mehrabian, 1980).

Generally, a person approaches stimuli that elicit feelings of pleasure and avoids ones that elicit pain. Arousalis also approached bu more importantly operates as a drive to the basic pleasure response so that as arousal increases, the behavioral response (approach or avoidance) appropriate to the pleasure level also increases. In a high pleasure situation, greater arousal will cause greater approach while in

a low pleasure situation greater arousal will cause greater avoidance. These mechanisms have been demonstrated in terms of work, food consumption, affiliation, alcohol consumption, attitude change, and so on (Mehrabian, 1980; Biggers and Pryor, 1982).

Dominance-submissiveness operates as permission to behave. When a person feels dominant (s)he feels as if (s)he has freedom to enact a full range of behavior. When pleasure and arousal are high we expect strong approach behavior, if one also feels dominant (s)he would approach more than if (s)he felt submissive. (Biggers and Rankis, 1982).

Measurement Issues

A series of paper and pencil measuring instruments have been developed to measure pleasure, arousal, dominance, and approach-avoidance. Each of these instruments has produced high reliability scores (alpha above .80) in previous research. (Russell & Mehrabian, 1974).

These measuring instruments deal with emotion as reported in language. This method of measuring emotion has been criticized in the past because it does not rely on a behavioral indices. Mehrabian has suggested that researchers abandoned investigation of emotion as reported in language in an attempt to appear scientific. It would seem acceptable, however, to use language since the underlying structure of emotion as reported by this method is similar to the structure reported with other methods (Mehrabian, 1980). If this avenue of investigation is fruitful then we should proceed.

STUDY ONE

This study attempted to determine if emotion-eliciting qualities can be used as a basis for describing interpersonal situations. If so, the emotional response dimension can then serve as the basis for a typology of situations. The first step in developing a scientific body of knowledge is the construction of a typology--a method of organizing and categorizing "things" (Reynolds 1977). Without such a system of organization it is hard to proceed with the other tasks of science such as the specification of relationships, predictions, explanation, a sense of understanding, and potential control.

For a typology to be useful Reynolds (1977) suggests three criteria. First, the system should be exhaustive, that is, there are no "things" of the group being classified that cannot be placed in the scheme. Second is mutual exclusiveness meaning that there is no ambiguity about where each thing is to be placed in the scheme. Third, is the criterion that the typology should be consistent with the concepts used in the statements that express the other purposes of science (prediction, explanation, etc.)

This study investigates the first two of these issues, exhaustiveness and mutual exclusiveness. If we can conceptualize interpersonal situations as complex sets of stimuli having their sources in persons, places, and actions that are perceived as a gestalt by an individual, and if stimuli--no matter how complex or how many sense modalities are involved--can be described in terms of their emotion-eliciting qualities, then we should be able to construct a suitable typology for situations based on emotional response.

The criterion of exhaustiveness is met if a number of subjects can reliably scale situations that are very diverse. This would require:

1) the construction of a set of situations that vary each of three components: persons (including the absence of persons), places, and actions.
2) the rating of these situations by naive subjects.
3) high reliability of the measurement instruments.

The criterion of mutual exclusiveness is met if no ambiguity remains about the classification of a situation after scaling. That is, there should be a response (a mean) for each of the three factors; pleasure, arousal, and dominance.

Since we are dealing with a three factor classification system several additional requirements are imposed. Each of the three factors must be independent. If not, they are redundant and do not add to our descriptive abilities. This means that we should be able to locate situations that are extremely high on one dimension and low on each of the others, low on one dimension and high on each of the others and so on. All combinations of high and low for each dimension should be possible.

Second, each of the three dimensions is considered to be a domain. Each domain is measured with a set of bi-polar scales. Each scale should have high reliability but more importantly each scale should account for the majority of the reliable variance of the scores in that domain.

Third, situations that we might class as extreme on the various scales should be statistically different (high pleasure versus low pleasure etc.). For all test alpha = .05.

Sample

A total of 120 male and female undergraduate students who were enrolled in a variety of Communication classes participated in this study. Each subject responded to eight of the situations.

Procedure

Forty-eight interpersonal situations were created by the authors from those suggested by previous research, colleagues, students, brainstorming and so forth. An attempt was made to create situations that were diverse.

The use of hypothetical situations rather than naturally occurring ones is acceptable in this instance for several reasons. First, our goal is to investigate the potential usefulness of an approach to classifying situations, not to fully explore all of the ramifications of that system. This first test does not have to answer all the questions about such a system but merely open the door for other researchers to follow.

Second, if Russell (1980) is correct, subjects will be using the same cognitive schema of emotions no matter what type of stimuli are presented. The results of other research suggest that the schema is stable across a multitude of methodologies.

Third, if Osgood (1960) is correct, there is a biological mechanism that underlies the emotional response. These mechanisms are going to be operating no matter what type of approach we take. These arguments give us ample reason to believe that at this early juncture in the investigation of emotion, verbal descriptions of situations will be adequate to our purpose.

Each situation was typed in a standard format at the top of a sheet of paper. Scales for each of the emotional dimensions were represented below each situation. In the 18 bi-polar adjectives that comprise the pleasures, arousal and dominance scales were presented below in a randomized order. Direction of scale values was reversed on alternating items.

Situations were selected randomly and ordered in six groups of eight. No situation appeared in more than one grouping. Twenty six copies of each group of eight were produced. Instructions asked subjects to read each situation carefully and take a few minutes to create the situation for themselves, imagining that they were actually in the situation. Then the subject was asked to indicate how (s)he would feel if (s)he were in this situation by filling out the emotion-eliciting scales. After completion of the scales the subject was asked to read the next situation and repeat the process. Twenty observations were generated for each stimulus or a total of 960 observations (20 observations per stimulus x 48 stimuli = 960 total observations).

Results

Reliability of the scales was checked by calculating coefficient alpha. Reliabilities were deemed to be acceptable (Dominance = .82, Arousal = .84, Pleasure = . 92).

Mean pleasure, arousal, and dominance scores were calculated for each situation. Means and standard deviations are presented for each situation in Table 1.

Insert Table 1 About Here

Ranges were calculated for each of the dimensions. Scores in the upper one-third of each range were designated as high and those in the lower one third were designated as low. Each mean was then classed as high, moderate, or low.

To test for independence and variance accounted for, a series of analyses of variance were conducted using, arousal and dominance as dependent measures. Stimuli were selected for each cell of a 2x2x2 ANOVA with two levels of pleasure (high and low), two levels of arousal (high and low), and two levels of dominance (high and low).

(Example: for a situation to be selected as appropriate for the high pleasure-low arousal-high dominance cell it would have had a mean pleasure score in the top one-third of the range for pleasure scores, a mean arousal score in the bottom one-third of the range for arousal scores and a mean dominance score in the top one-third of the range for dominance scores.)

Insert Table 2 About Here

Three ANOVAS were conducted, one each for the pleasure, arousal, and dominance means. The first ANOVA examined pleasure scores across all conditions. The pleasure dimension was significant, $F(1,165) = 342.152$, $p = < .001$ The arousal dimension was not significant, $F(1,165) = 1.982$, $p = .161$. The dominance dimension was significant, $F(1,165) = 20.704$, $p = < .001$. None of the two way interactions was significant. The three way interaction was significant. $F(1,165) = 13.544$, $p = <.001$.

Pleasure accounted for the majority of the variance, 63%, while dominance accounted for 3.6% and the three way interaction accounted for 2.4%. The mean for high pleasure was 7.35, while low was 3.04. The mean for high pleasure was significantly greater than that for low pleasure and the pleasure dimension accounted for the majority of the variance of that domain. This leads us to conclude that pleasure is independent, the domain is tapped by the scale, and it can be manipulated.

An ANOVA for the arousal scores revealed that the pleasure dimension was significant, $F(1,165) = 17.551$, $P = < .001$, the arousal dimension was significant, $F(1,165) = 151.973$, $P = < .001$, and the dominance dimension was nonsignificant, $F(1,165) = 4.291$, $P = .212$. The pleasure by arousal interaction was significant, $F(1,165) = 8.341$. $P = .004$, as was the pleasure by dominance interaction, $F(1,165) = 4.536$, $P = .035$.

The pleasure dimension accounted for 5% of the variance while arousal accounted for 44%. The pleasure by arousal interaction accounted for 2.3% of the variance while the pleasure by dominance interaction accounted for 1.3% of variance. The mean for high arousal was 6.66 while low arousal was 4.10. The significant difference in the means, the result of the F test and the fact that the largest percentage of the variance for arousal scores was accounted for the arousal dimension indicates that arousal is significant and independent.

The ANOVA for dominance scores revealed that pleasure was significant, $F(1,165) = 9.994$, $P = .002$, arousal was not significant, $F(1,165) = .766$, $P = .383$, and dominance was significant, $F(1,165) = 176.097$, $P = <.001$. The pleasure by arousal interaction was significant,

$F(1,165) = 4.722$, $P = .031$. Arousal by dominance was significant, $F(1,165) = 7.711$, $P = .006$, and the three way interaction was significant, $F(1,165) = 3.966$, $P = .048$.

Pleasure accounted for 2.7% of the variance, dominance for 48.4%. The pleasure by arousal interaction accounted for 1.2% while the arousal by dominance interaction accounted for 2.1%. The three way interaction accounted for 1% of the variance.

The mean for high dominance was 6.74 and low dominance was 4.06. This combined with the results of the F test and the percentages of variance accounted for lead to the conclusion that dominance was manipulated independently of the other dimensions.

Discussion

It would seem that our first set of conditions for accepting emotion-eliciting qualities as the basis for a typology are met. Subjects were able to define the situations in terms of pleasure, arousal, and dominance. The dimensions seem to be independent as indicated by the analysis of variance. The scales are acceptably reliable and a large portion of the variance of scores in each domain is accounted for by that dimension.

STUDY TWO

Rationale

The third and most critical test of the usefulness of a typology depends on the degree to which the system of classification lends itself to the other purposes of science--prediction and explanation.

Classification of situations according to emotion-eliciting qualities will be useful to the extent that it allows prediction and explanation of other variables.

It has been suggested that the emotion-eliciting qualities of a stimulus will predispose an individual to either approach or avoid that stimulus. Specifically, we suggest that it is not only intuitively appealing, but previous research supports the premise that individuals will prefer situations that they find to be pleasurable. Therefore:

H_1: Individuals will tend to approach pleasurable situations more than displeasurable ones.

A state of activity has been generally found to be preferred to a state of inactivity. Therefore:

H_2: Individuals will tend to approach arousing situations more than unarousing ones.

It has been generally believed that individuals prefer a feeling of being in control. This has not always been confirmed by research with this theory even though it is suggested by research in other areas. Biggers and Rankis (1982) suggested that the lack of support for this proposition has been due to the restricted range of the dominance dimension in previous studies. Allowing dominance to vary fully it is suggested that:

H_3: Individuals will tend to approach dominance eliciting situations more than submissiveness eliciting ones.

Previous studies suggest that pleasure eliciting situations are approached and that arousal acts as a drive for this basic response. Therefore:

H_4: Pleasure and arousal will interact so that when pleasure is high, approach will increase with high arousal, but when pleasure is low, approach will decrease with greater arousal.

If pleasure generates approach and dominance acts as permission to behave, then:

H_5: Pleasure and dominance will interact so that when pleasure and dominance are high, approach will be greater than when pleasure is high but dominance is low. When pleasure is low approach will be less when dominance is high than when dominance is low.

If arousal is preferred, and if dominance acts as permission, then:

H_6: Arousal and dominance will interact so that when arousal and dominance are high, approach will be greater than when arousal is high but dominance is low. However, when arousal is low approach will be less when dominance is high than it will be when dominance is low.

If pleasure is a preferred state that will produce approach and arousal acts as a drive to this basic response with dominance as permission to act on ones desire, then:

H_7: When pleasure and arousal are high, approach will be greatest when dominance is also high. When pleasure is low and arousal is high, approach will be least when dominance is high. When pleasure is high and arousal is low, approach will be greater when dominance is high than it is when dominance is low. If pleasure and arousal are low, approach will be greater when dominance is low.

Subjects

Subjects were 85 male and 85 female undergraduate students enrolled in Junior and Senior level Communication courses. Some subjects received course credit for participation.

Operationalization

The eight situations used in the second part of the first study reported here constituted the stimuli for this experiment. Pleasure, Arousal, and Dominance each had two levels designated as high and low.

The dependent variable for the experiment was approach-avoidance. It was measured using a questionnaire developed by Mehrabian (1980). We are not actually measuring approach-avoidance but rather anticipated approach-avoidance. Subjects are telling us what they believe they would do in these situations. This is acceptable in this case since this is an exploratory study. It will be important to replicate this study with naturally occurring situations and behavioral measures.

Power

Each cell of the experiment will have 170 observations. The effect size from previous studies has been found to be medium, d = .50 (Russell and Mehrabian, 1978). With cell sizes of 170 Cohen (1977) suggests that effect size of .50 with alpha = .05 will result in a power of .99 for a t-test of means. If effect size is greater than .5, power will be greater than .995. If effect size is smaller, the following power values will result: d = .40, power = .95; d = 30, power = .80; d = .20, power = .51.

If the effect size is small (.30), then power will still be adequate to detect differences. Only in the case where effect size is .2 or smaller will power fall to chance or lower.

Power is calculated for the t-test of means for several reasons. First, the most important comparisons of this study will be conducted at this level. Second, Cohen's (1977) suggestions of power calculations for the F test in the case of a 2x2x2 Anova are troublesome in that they seem to be quite liberal (over-estimate power). Third, since cell sizes given for F test comparisons are smaller, selection of the more conservative estimates guarantees the integrity of the power estimates.

Design

A 2x2x2 fully factorial analysis of variance design with two levels of pleasure, arousal, and dominance was used. Eight cells were produced.

Procedure

Subjects participated in the experiment in groups. Subjects received a written set of instructions that asked them to imagine that they actually were in the situation described and then to answer the questions that followed (the Approach-Avoidance Scale).

Each subject read and responded to all eight stimuli. Order of presentation of the stimuli was systematically varied to control for order effects.

After completion of the last approach-avoidance scale, subjects were asked, in a separate set of instructions, to rate the emotions

elicited by the last stimulus. This served as a manipulating check. In this manner, 21 checks were produced for each stimulus.

Debriefing

After all of the subjects had completed the experiment, the experimenter explained the intent of the study. Since no deception was involved, the explanation was a straight-forward presentation of the theory. Subjects were asked if they had guessed the intent of the study. None indicated that they had.

Results

Reliability of the dependent measure was calculated using coefficient alpha. The resulting value of .85 was deemed adequate. Means and standard deviations for approach scores were calculated by averaging individual responses for each stimulus.

Tests of Hypotheses

The first step in the tests of the hypotheses was to perform an ANOVA for mean approach scores (see Table 3). Examination of the results from this test indicated that all of the main effects and all but one of the interactions were significant. Pleasure significantly affected approach ($\underline{F}(1,1353) = 3225.823$, $\underline{p} = <.001$). Arousal was also significant ($\underline{F}(1,1353) = 38.191$, $\underline{p} = <.001$). Dominance also produced a significant effect ($\underline{F}(1,1353) = 192.034$, $\underline{p} = <.001$).

Insert Table 3 About Here

Two of the three two-way interaction effects were also significant. Pleasure x arousal ($F(1,1353) = 36.651$, $p = <.001$) and pleasure x dominance ($F(1,1353) = 43.352$, $p = <.001$) were significant. Arousal x dominance was not significant ($F(1,1353) = 1.262$, $p = .261$).

The three-way interaction of pleasure, arousal, and dominance was significant. ($F(1,1353) = 104.205$, $p = <.001$)

Eta^2 was calculated to determine variance accounted for. An overall eta^2 of .7218 was found. The eta^2 for each individual dimension revealed that pleasure accounted for 64 percent of the variance while arousal accounted for .8 percent of the variance and dominance accounted for 3.6 percent of the variance in approach scores.

Scheffe's test was used to probe the various mean contrasts suggested by the hypotheses. A cumulative table of means and results is presented in Table 4. Hypothesis one suggests that individuals prefer high pleasure to low pleasure. The means, (high pleasure = 6.41 and low pleasure 2.53), and the significance, $p = .001$, indicate that this is supported.

Insert Table 4 Here

Hypothesis two suggested that high arousal would be approached more than low arousal. The means for these two, (high = 4.68 and low = 4.25), plus the significance, $p = <.001$, indicated that this was supported.

Hypothesis three suggested that approach would be greatest when dominance was high. This was also supported. The mean for high

dominance was 4.92 while the mean for low dominance was 4.01. The difference was statistically significant, $p = <.001$.

Hypothesis four stated that pleasure and arousal would interact so that when pleasure was high, approach would be highest when arousal was also high. However, when pleasure was low the results would be different with greater approach when arousal was low. The interaction effect was found to be significant, $p = <.001$, but examination of the means confirmed only one of the predicted differences. In the high pleasure condition approach was greater when arousal was high, (high arousal 6.83 and low arousal 6.11), $p = < .05$. This supports the first prediction. In the low pleasure condition, no difference existed between the two means (high arousal 2.55, low arousal 2.54). The second prediction is not confirmed.

Hypothesis five suggested that pleasure and dominance would interact. The result of the F test suggests that this interaction is present (pleasure x dominance $F(1,1353) = 43,352$, $p = < .001$). However, only one of the two predictions in hypothesis five was confirmed by examination of the means. In the high pleasure condition, when dominance is high approach is higher than when dominance is low (high dominance 7.09 and low dominance 5.73, $p = < .05$). When pleasure is low, greater approach is still found when dominance is high (high dominance 2.77 and low dominance 2.31, $p = < .05$). Hypothesis five is only partially supported.

Hypothesis six suggested that dominance and arousal would interact. Examination of the F test indicated that this was not the case ($F(1,1353) = 1.262$, $p = .261$). Hypothesis six is not confirmed.

Hypothesis seven predicted a three way interaction between pleasure, arousal, and dominance. The F test confirmed the presence of this interaction ($F(1,1353) = 104.205$, $p = < .001$). Examination of the means for the four predicted differences indicated that three of the four are as predicted. High pleasure-high arousal-high dominance (7.13) is greater than high pleasure-high arousal-low dominance (6.52, $p = < .05$). Low pleasure-high arousal-high dominance (3.09) is not less than low pleasure-high arousal-low dominance (1.99). High pleasure-low arousal-high dominance (7.06) is higher than high pleasure-low arousal-low dominance (4.92), $p = < .05$). Low pleasure-low arousal-high dominance (2.46) is lower than low pleasure-low arousal-low dominance (2.62). This difference is not significant. Hypothesis seven is partially supported.

Power analysis of the various mean contrasts is presented in Table 5.

Insert Table 5 About Here

Examination of the power table indicates that power was adequate for most of the mean contrasts that were of importance. In only one case was power too low for an adequate test of a predicted difference. In the case of the last prediction of hypothesis seven, low pleasure - low arousal - low dominance, the means were in the predicted direction but the difference was not significant. The power for this test was only .24. This may account for the lack of significance.

Since the power for all of the critical tests, except one, was .97 or greater, power is deemed sufficient to have discovered all predicted

effects. This line of reasoning is proposed due to the fact that the power for F test requires smaller samples to detect differences. If, then, power is adequate for the t-test it will be even greater for the F test.

Discussion

This paper has presented the results of two studies which investigated human emotional responses to situations and behaviors related to these responses. The results of these investigations have serious and far-reaching implications for teachers and researchers in the field of human communication.

Based on these and other studies it now seems reasonable to conclude that emotion-eliciting qualities comprise a system for classifying situations that is exhaustive, mutually exclusive, and related to the theoretical purposes of explanation and prediction. Such a system begins to fill a methodological void and promises to open a rich new line of further research that may shed new light on the relationships between communication and situation.

Furthermore, we may conclude tentatively from the present studies that emotion-eliciting qualities of interpersonal situations relate systematically to other variables. In the present studies approach toward or avoidance of interpersonal situations was predicted and explained in terms of emotions elicited by those situations

The phase "communication is situationally influenced" has become an axiom of communication studies. Investigation of these influences has been seriously hampered by the lack of a systematic method for the description, manipulation and classification of the situation variable.

Now that we have demonstrated that such a system can be created it becomes possible to investigate the influences of the situation on communication behavior. Unlimited sets of questions about relationships between situations and other variables and be generated. We offer just a few in the hope that it will stir the intellectual curiosity of other researchers who will begin to elaborate a conceptual frame in this area.

We have wondered how the situation influences such things as person perception. What affect does the situation have on appraisals of strangers when we meet them? How does the situation influence escalation of interpersonal relationships? In what way does the situation impact the selection of friends or enemies? What characteristics of a situation will lead to greater or lesser persuasion? What sorts of effects will variations of different components in the situation have on the gestalt? Are persons more important than objects, for example? Do different activities in the situation predispose us to view the gestalt differently? How does communication behavior fit into the model that we have proposed? Is communication with another an approach behavior or is it an avoidance behavior? Is it possible that communication can be approach or avoidance depending on the situation? This list could be extended beyond these few suggestions and we hope that each of you has already begun to formulate your own.

Some limitations of the studies obtain and are noted here. The subject population was composed of students, which limits the generalizability of the findings. The method of investigation used verbal descriptions of situations rather than "real" situations. It could thus be argued that the studies are dealing only with

classifications of subject imagination. The authors suggest that further research in this area should use naturally occurring situations in order to validate the present findings.

TABLE 1
Means and Standard Deviations
of Pleasure, Arousal, and Dominance

Situation	Pleasure Mean	Pleasure Std. Dev.	Arousal Mean	Arousal Std. Dev.	Dominance Mean	Dominance Std. Dev.
1. You are promoted at work after being recognized for outstanding achievement. It gives you a feeling of being bold and creative. Your new position is one that is admired and powerful.	7.83	1.35	7.32	1.17	7.23	1.35
2. You have graduated from school. You fell vigorous and triumphant. You are excited about your future which you expect to be activated and joyful.	7.76	.88	7.08	.92	6.83	.84
3. You take a vacation of at least one week. You are untroubled and quiet. It is a relaxed time.	8.32	.71	3.71	1.46	5.26	1.77
4. You get a job with numerous opportunities where you have much to learn about the new work. However, you are unperturbed, untroubled. Your approach is leisurely.	6.63	1.85	5.01	1.57	4.69	1.45
5. Getting fed up, you complain about your job to your boss. You have a feeling of being defiant and angry. The situation makes you hostile and enraged.	2.65	.75	7.63	1.46	5.38	1.55
6. You are disgusted with and fire an employee. You have a feeling of cold anger. You are scornful.	3.85	1.28	7.46	.82	7.73	.95
7. You initiate a break-up with your boyfriend or girlfriend and are unconcerned. You are uninterested and proud, uncaring.	6.07	1.52	4.86	1.57	7.48	.09
8. You can't stand your job anymore and you quit. You are uninterested even uninterested and selfish.	3.40	1.49	4.95	1.93	5.35	1.28
9. You form a new relationship in which you feel totally protected and cared for. You are surprised and impressed. It gives you a feeling of being amazed and fascinated.	7.79	.66	5.84	1.04	4.18	1.32

Situation	Pleasure Mean	Pleasure Std. Dev.	Arousal Mean	Arousal Std. Dev.	Dominance Mean	Dominance Std. Dev.
10. You feel in love with someone who overwhelms you. You are loved, infatuated, and sexually excited. You get married.	8.46	.55	7.87	.96	4.29	1.56
11. Someone relieves you of an unpleasant responsibility that you have tried to shed for a long time. You feel consoled and protected. You are sheltered.	7.82	1.05	4.43	1.21	4.33	1.80
12. Your relationship with your spouse or partner significantly improves because you agree to follow certain rules. It gives you a feeling of being tranquilized and sleepy. You let your life be guided by a new found philosophy.	5.80	2.00	3.40	1.32	3.05	1.32
13. You serve a jail sentence of at least one day or more. You are fearful, terrified, and helpless. You feel frustrated and very embarrased.	2.31	.90	6.22	1.96	3.15	.80
14. You experience trouble at work. You are irritated and humiliated. You are tense due to the embattled and unsafe condition that you find yourself in.	2.77	1.09	7.04	1.56	4.87	1.48
15. Your boyfriend or girlfriend decides to break-up with you against your wishes. You are depressed, lonely and despairing. It is a sad and unhappy time in your life. You are discouraged.	2.61	.93	4.93	1.61	3.75	.99
16. You experience sexual difficulties. You are feeling fatigued and feeble. You are detached, discouraged, even deactivated. It is a time of being bored and blase.	2.41	.94	3.43	1.29	4.00	1.12
17. You take a vacation of at least one week. You are untroubled and quiet. It is a relaxed time. You are free to do as you please.	7.95	.87	4.66	1.78	6.64	1.58
18. You take a vacation of at least one week. You are untroubled and quiet. It is a relaxed time. You feel in control.	8.10	.67	4.03	1.57	6.05	1.76

Situation	Pleasure Mean	Pleasure Std. Dev.	Arousal Mean	Arousal Std. Dev.	Dominance Mean	Dominance Std. Dev.
19. You have become fed up with your job. You have a feeling of scornful, cold anger. You are defiant and angry. You complain to your boss.	2.88	.95	6.71	1.59	5.45	1.50
20. You complain to your boss because you have become fed up with your job. The entire situation makes you feel hostile and enraged. You are scornful, defiant, and angry.	3.15	1.43	6.73	2.03	5.39	1.62
21. You have become disgusted with an employee. You become hostile and enraged. You are scornful and angry. You fire the employee.	4.40	1.14	7.10	1.28	7.13	1.09
22. You have a feeling of cold anger toward one of your employees. You are disgusted, angry and hostile. You fire the employee.	5.46	1.70	6.54	1.04	7.76	1.20
23. Your relationship with your boyfriend or girlfriend has lost its interest for you. You initiate a break-up. You are extremely unconcerned. You do not care. You are proud and uninterested. It is your decision.	5.59	1.49	4.79	1.26	6.83	1.28
24. You find that you are no longer interested in the person that you have been dating. You end the relationship. You are unconcerned about the result. You are selfish and proud; uncaring. It is what you want to do.	5.03	1.67	4.65	1.06	6.28	1.34
25. You have become completely uninterested in your job. You are unconcerned and proud. You go to your boss and tell him you can't stand your job anymore. You quit. It is what you want to do.	5.46	2.47	5.27	1.55	6.42	1.38
26. You can't stand your job anymore. You are uninterested and unconcerned. You have a feeling of not caring. You think about it and decide to quit. You do so.	5.32	2.47	5.17	1.80	6.54	1.49
27. You take a vacation of at least one week. You are free to do as you please. You plan to just relax. You are untroubled and quiet.	7.79	.92	4.27	1.45	5.91	1.34

Situation	Pleasure Mean	Pleasure Std. Dev.	Arousal Mean	Arousal Std. Dev.	Dominance Mean	Dominance Std. Dev.
28. You take a vacation of at least one week. You are totally in control of the situation. You are untroubled and quiet. It is a relaxed time.	7.80	1.42	4.59	1.65	5.92	1.92
29. You have become disgusted with an employee. You are hostile and enraged It is a very nasty situation. You are scornful and angry. You fire the employee.	4.83	1.84	7.23	1.11	7.32	1.19
30. You have a feeling of cold anger toward one of your employees. The situation makes you miserable. You are disgusted, angry and hostile. You fire the employee.	4.25	1.75	7.12	1.35	7.15	1.11
31. Your relationship with your girl-friend or boyfriend has lost its interest for you. In a very unpleasant scene, you initiate a break-up. However, you are unconcerned, uncaring. You are proud and uninterested. It is your decision.	5.29	1.70	5.62	1.25	6.41	1.07
32. You find that you are no longer interested in the person that you have been dating. In a very nasty scene you end the relationship. You are unconcerned, selfish, and proud. It is what you want to do. You are uncaring and cold.	5.72	1.89	6.12	1.49	7.39	.79
33. You initiate a break-up with your boyfriend or girlfriend.	4.40	.85	6.13	1.10	6.18	.53
34. You can't stand your job anymore and you quit.	5.78	1.15	6.44	1.00	6.30	.96
35. Someone you know has died. You are in charge of all of the funeral arrangements.	4.80	.97	6.01	1.09	6.10	.75
36. You are listening to your roommate's story about their big heartbreak.	5.62	1.12	6.74	1.00	6.02	1.02
37. You are sitting through a dull lecture on a subject that you know quite a bit about.	4.90	1.02	5.87	.98	5.98	.87
38. You have a problem with your car late at night on a deserted stretch of road, but you can fix it.	4.83	.98	5.98	1.36	5.63	1.07

Situation	Pleasure Mean	Pleasure Std. Dev.	Arousal Mean	Arousal Std. Dev.	Dominance Mean	Dominance Std. Dev.
39. You are ending a relationship with someone that you don't care about.	6.20	1.85	5.56	1.57	7.07	.95
40. You are waiting at your office for a salesman to call. He is late for your appointment and doesn't have anything you want anyway.	2.67	1.02	6.02	1.48	6.84	.90
41. You have a job that you don't care about. You are uninterested and proud.	3.53	1.31	3.43	1.01	5.97	1.35
42. You are a speech teacher listening to a speech that is repetitive and dull.	3.10	.95	3.07	1.04	5.91	1.27
43. You are a babysitter late at night waiting for the parents to come home	5.41	1.20	4.10	1.11	5.60	1.13
44. You are a waitress or waiter in a dull little restaurant. It is the middle of the afternoon.	2.87	1.07	2.42	.93	4.28	1.70
45. You are a lower level manager in a dull job with no chance of advancement.	1.84	.80	3.24	1.72	3.47	1.23
46. You are a teacher of a class of totally uninterested students. It is dull and uninteresting.	2.53	1.41	3.73	1.23	5.11	1.31
47. You are a guard in charge of a group of inmates. Nothing ever happens. It is dull and uninteresting.	3.88	1.33	3.35	1.27	6.27	1.62

*Each dimension has a possible range of values from 1 to 9.

Table 2 Means and Standard Deviations of Emotional Responses, Manipulation Check

Stimuli	Pleasure Mean	Pleasure SD	Arousal Mean	Arousal SD	Dominance Mean	Dominance SD
1	7.84	.57	6.95	1.12	7.33	1.02
6	4.26	1.30	6.50	.96	6.82	.97
10	7.22	1.63	6.63	.98	4.65	1.07
11	6.29	1.91	4.27	1.46	4.22	1.67
13	2.15	1.42	6.52	1.33	3.00	1.14
16	2.98	1.72	3.55	1.29	4.27	1.33
17	8.05	.98	5.35	1.60	6.56	1.27
48	2.80	2.03	3.16	1.70	6.15	1.77

Graphic Representation

DOMINANCE	Pleasure: High Arousal, high	Pleasure: High Arousal, low	Pleasure: Low Arousal, high	Pleasure: Low Arousal, low	
high	7.84	8.05	4.26	2.80	Pleasure
	6.95	5.35	6.50	3.16	Arousal
	7.33	6.56	6.82	6.15	Dominance
low	7.22	6.29	2.15	2.98	Pleasure
	6.63	4.27	6.52	3.55	Arousal
	4.65	4.22	3.00	4.27	Dominance

Note: The numbers in each cell represent mean pleasure, arousal, and dominance for that stimuli as found in the manipulation check.

Table 3. ANOVA for Approach Scores

Source	df	Mean Square	F	P	% Variance
Pleasure	1	5133.039	3225.823	<.001	64%
Arousal	1	60.771	38.191	<.001	.8%
Dominance	1	289.659	182.034	<.001	3.6%
Pleasure x Arousal	1	58.320	36.651	<.001	.7%
Pleasure x Dominance	1	68.982	43.352	<.001	.8%
Arousal x Dominance	1	2.009	1.262	.261	
Pleasure x Arousal x Dominance	1	165.615	104.205	<.001	.2%
Explained	7	824.889	518.336	<.001	
Residual	1352	1.591			
Total	1359				

n = 1360

eta^2 = .7281

eta pleasure = .80
eta arousal = .09
eta dominance = .19

TABLE 4 Summary of Tests of Hypotheses

		PLEASURE			
		AROUSAL		AROUSAL	
		HIGH	LOW	HIGH	LOW
DOMINANCE	HIGH $\bar{Y}HD=4.92$	1 7.12	2 7.05	3 3.08	4 2.46
	LOW $\bar{Y}LD=4.01$	5 6.53	6 4.90	7 1.99	8 2.62
		$\bar{Y}HP=6.41$		$\bar{Y}LP=2.53$	
		$\bar{Y}HA=4.68$	$\bar{Y}LA=4.25$		

PERCENTAGE VARIANCE	HYPOTHESIS		MEAN CONTRAST	p
64 %	H1:	Pleasure	$\bar{Y}HP>\bar{Y}LP$	$<.05$
.7%	H2:	Arousal	$\bar{Y}HA>\bar{Y}LA$	$<.05$
3.6%	H3:	Dominance	$\bar{Y}HD>\bar{Y}LD$	$<.05$
.8%	H4:	Pleasure	$\bar{Y}1+5>\bar{Y}2+6$	$<.05$
		by Arousal	$\bar{Y}3+7<\bar{Y}4+8$	$>.05$
.8%	H5:	Pleasure	$\bar{Y}1+2>\bar{Y}5+6$	$<.05$
		by Dominance	$\bar{Y}3+4<\bar{Y}+8$	$>.05$
	H6:	Arousal	No significant	
		by Dominance	difference	
2 %	H7:	Pleasure	$\bar{Y}1>\bar{Y}5$	$<.05$
		by Arousal	$\bar{Y}3<\bar{Y}7$	$>.05$
		by Dominance	$\bar{Y}2>\bar{Y}6$	$<.05$
			$\bar{Y}4<\bar{Y}8$	$>.05$

REFERENCES

Abelson, R. P., & Sermat, V. Multidimensional scaling of facial expressions. Journal of Experimental Psychology, 1962, 63, 546-554.

Averill, J. R., A semantic atlas of emotional concepts. JSAS Catalogue of Selected Documents in Psychology 1975, 5, 330. (MS. No. 421)

Berlyne, D. C., Conflict, Arousal, and Curiosity. New York: McGraw-Hill, 1970.

Berlyne, D. C. Arousal and reinforcement. In D. Levin (ed.), Nebraska Symposium on Motivation (Vol. 15). Lincoln, Nebraska: University of Nebraska Press, 1967.

Biggers, Thompson & Pryor, Bert, "Attitude Change as a Function of the Emotion Eliciting Qualities of Environment," Personality and Social Psychology Bulletin. March, 1982, 8, pp 94-99.

Biggers, Thompson & Rankis, Olaf E., "Dominance-Submissiveness: A Affective Response to Situations and its Relationship to Approach-Avoidance." (Submitted for editorial review)

Borgatta, E. F., Mood, personality, and interaction. Journal of General Psychology, 1961, 64, 105-137.

Brooks, W. D., & Emmert, P., Interpersonal Communication, William C. Brown Publishing Co., Dubuque, Iowa, 1980.

Bush, L. E., II. Individual differences; multidimensional scaling of adjectives denoting feelings. Journal of Personality and Social Psychology, 1973, 25, 50-57.

Clyde, D. J., Manual for the Clyde Mood Scale, Coral Gables: Biometric Laboratory, University of Miami, 1963.

Cohen, J. Statistical Power Analysis for the Behavioral Sciences. New York: Academic Press, 1977.

Curro, J. P., & Cattell, R. B. Manual for the Eight State questionnaire. Champaign, Illinois: Institute for Personality and Ability Testing, 1975.

De Vito, J. A., The Interpersonal Communication Book, Harper & Row, New York, 1980.

Engen, T., Levy, N., & Schlosberg, H., A new series of facial expressions. American Psychologist, 1957, 12, 264-266.

Gladstones, W. H., A mulidimensional study of facial expression of emotion. Australian Journal of Psychology, 1962, 14, 95-100.

Hazzard, F. W., A descriptive account of odors. Journal of Experimental Psychology, 1930, 13, 297-331.

Heath, R. G. (ed.) Studies in Schizophrenia. Cambridge, Mass.: Harvard University Press, 1954.

Heath, R. G., Electrical self-stimulation of the brain in man. American Journal of Psychiatry, 1963, 120, 571-577.

Heath, R. G., Pleasure response of human subjects to direct stimulation of the brain: physiologic and psychodynamic considerations. In R. G. Heath (ed.), The Role of Pleasure in Behavior. New York: Harper & Row, 1964b.

Karwoski, T. F. and Odbert, H. S. Color-music. Psychological Monographs, 1938, 50, No. 2 (Whole No. 222).

Knapp, Mark L., Social Intercourse: From Greeting to Goodbye. Boston: Allyn and Bacon, Inc., 1978.

Luria, A. R., The Mind of a Mnemonist. New York: Avon, 1969.

Masterson, J. T., Speech Communication in Traditional and Contemporary Marriages, Doctoral Dissertation, University of Denver, 1977.

McCroskey, J. C. & Richmond, V. P., The Quiet Ones: Communication Apprehension and Shyness, Dubuque, Iowa; 1980.

Meddis, R., Bipolar factors in mood adjective checklists. British Journal of Social and Clinical Psychology, 1972, 11, 178-184.

Mehrabian, A., Nonverbal Communication. Chicago, Illinois: Aldine-Atherton, 1972a.

Mehrabian, A., Nonverbal communication. In J. K. Cole (ed.) Nebraska Symposium on Motivation, 1971 (Vol. 19). Lincoln: University of Nebraska Press, 1972b.

Mehrabian, A., A New Theory of Psychology, 1980.

Mehrabian, A., & Ksionsky, S., A Theory of Affiliation. Lexington, Mass.: D. C. Heath, 1974.

Mehrabian, A. & Russell, J. A., An Approach to Environmental Psychology., Cambridge, Mass., MIT Press, 1974a

Miller, G. R., & Steinberg, M., A New Analysis of Interpersonal Communication, Science Research Associates, Chicago, 1975.

Mortensen, C. D., Communication: The Study of Human Interaction, McGraw-Hill, New York, 1972

Odbert, H. S., Karwoski, T. F., & Eckerson, A. B. Studies in synesthetic thinking: I. Musical and verbal associations of color and mood. Journal of General Psychology, 1942, 26, 153-173.

Olds, J. Pleasure centers in the brain. Scientific American, 1956, 195 (4), 105-116.

Osgood, C. E., The cross-cultural generality of visual-verbal synesthetic tendencies. Behavioral Science, 1960, 5, 146-169.

Osgood, C. E. Dimensionality of the semantic space for communication via facial expressions. Scandinavian Journal of Psychology, 1966, 7, 1-30.

Osgood, C. E., On the whys and wherefores of E, P, and A. Journal of Personality and Social Psychology, 1969, 12, 194-199.

Osgood, C. E., May, W. H., & Miron, M. S., Cross-cultural universals of affective meaning. Urbana: University of Illinois Press, 1975.

Osgood, C. E., Suci, G. J., & Tannenbaum, P.H., The Measurement of Meaning. Urbana: University of Illinois Press, 1957.

Pervin, L. A., Definitions, measurements, and classifications of stimuli, situations, and environments. Human Ecology, 6, 1, pp 71-105, 1978.

Reynolds, P. A., A Primer in Theory Construction, Bobb-Merril, Indianapolis, 1977

Russell, J. A., A circumplex model of affert. Journal of Personality and Social Psychology, 1980, 39, 6, 1161-1178.

Russell, J. A., & Mehrabian, A., Evidence for a three-factor theory of emotions. Journal of Research in Personality, 1977a, 11, 273-294.

Russell, J. A., & Mehrabian, A., Approach-Avoidance and affiliation as functions of the emotion-eliciting qualities of an environment. Environment and Behavior, 1978a, 10, pp 355-387

Russell, J. A. & Pratt, G., A description of the affective quality attributed to environments, Journal of Personality and Social Psychology, 1980, 38, no. 2, pp. 311-327.

Russell, J. A., Ward, L. M. & Pratt, G. A., A factor analytic study of the affective quality attributed to environments. Unpublished Manuscript, 1978.

Schlosberg, H. Three dimensions of emotion. Psychological Review, 1954, 61, 81-88.

Smith, D. R., & Williamson, C. K., Interpersonal Communication, William C. Brown, Dubuque, Iowa, 1981

Snider, J. G., & Osgood, C. E. (eds.), Semantic Differential Technique. Chicago: Aldine, 1969.

Svensson, E., Mood: its structure and measurement. Goteborg Psychological Reports, 1978, 8, 1-19.

Von Hornbostel, E. M., Ueber Geruchshelligkeit. Pflueger's Archiv frue die gesamte Physiologie des Menschen und der tiere, 1931, 227, 517-538.

Williams, F., & Sundene, B., Dimensions of recognition: visual vs. vocal expression of emotion. Audio Visual Communications Review, 1965, 13, 44-52.